

WHAT IS CLAIMED:

1. A composition comprising:
one or more natural isomers of reduced folate selected from the group consisting of (6S)-tetrahydrofolic acid, 5-methyl-(6S)-tetrahydrofolic acid, 5-formyl-(6S)-tetrahydrofolic acid, 10-formyl-(6R)-tetrahydrofolic acid, 5,10-methylene-(6R)-tetrahydrofolic acid, 5,10-methenyl-(6R)-tetrahydrofolic acid, 5-formimino-(6S)-tetrahydrofolic acid, and polyglutamyl derivatives thereof;
a nutritional substance selected from the group consisting of a food preparation, an essential nutrient preparation, and combinations thereof;
wherein, when the nutritional substance is a food preparation, the food preparation comprises two or more food components and each gram of said food preparation has a natural molar amount, N, of said one or more natural isomers of reduced folate, wherein N is greater or equal to zero and wherein each gram of said composition has a total molar amount, T, of said one or more natural isomers of reduced folate greater than N; and
wherein, when the nutritional substance is an essential nutrient preparation, the essential nutrient preparation comprises a vitamin other than ascorbic acid.
2. A composition according to claim 1, wherein the one or more natural isomers of reduced folate is selected from the group consisting of 5-methyl-(6S)-tetrahydrofolic acid, 5-formyl-(6S)-tetrahydrofolic acid, 5,10-methenyl-(6R)-tetrahydrofolic acid, and polyglutamyl derivatives thereof.
3. A composition according to claim 1, wherein the total molar amount of said one or more natural isomers of reduced folate is between 5% and 200% of a human daily requirement for folate per customarily consumed quantity of said composition.
4. A composition according to claim 1, wherein the total molar amount of said one or more natural isomers of reduced folate is between 5% and

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3000% of an animal daily requirement for folate per customarily consumed quantity of said composition.

5. A composition according to claim 1, wherein said nutritional substance is a food preparation.

6. The composition according to claim 5, wherein the nutritional substance is a food preparation and wherein each gram of said food preparation further comprises no unnatural isomers of reduced folate selected from the group consisting of (6R)-tetrahydrofolic acid, 5-methyl-(6R)-tetrahydrofolic acid, 5-formyl-(6R)-tetrahydrofolic acid, 10-formyl-(6S)-tetrahydrofolic acid, 5,10-methylene-(6S)-tetrahydrofolic acid, 5,10-methenyl-(6S)-tetrahydrofolic acid, 5-formimino-(6R)-tetrahydrofolic acid, and polyglutamyl derivatives thereof, or one or more of said unnatural isomers of reduced folate in a molar amount less than T minus N.

7. A composition according to claim 5, wherein the food preparation is selected from the group consisting of breakfast foods, infant formulas, dietary supplements, complete diet formulas, and weight-loss preparations.

8. A composition according to claim 7, wherein the breakfast food is a prepared cereal, a breakfast drink mix, or a toaster pastry, and wherein the weight-loss preparations is a weight-loss drink or a weight-loss bar.

9. A composition according to claim 1, wherein the nutritional substance is an essential nutrient preparation comprising a vitamin other than ascorbic acid.

10. A composition according to claim 9, wherein the essential nutrient preparation further comprises ascorbic acid.

11. A composition according to claim 9, wherein the vitamin is present in an amount equal to or greater than 25% of the daily requirement for the vitamin per customarily consumed quantity of said essential nutrient preparation.

12. A method for increasing the folate content of a nutritional substance comprising:

providing a nutritional substance selected from the group consisting of a food preparation, an essential nutrient preparation, and combinations thereof; and

incorporating into the nutritional substance a molar amount of one or more natural isomers of reduced folate selected from the group consisting of (6S)-tetrahydrofolic acid, 5-methyl-(6S)-tetrahydrofolic acid, 5-formyl-(6S)-tetrahydrofolic acid, 10-formyl-(6R)-tetrahydrofolic acid, 5,10-methylene-(6R)-tetrahydrofolic acid, 5,10-methenyl-(6R)-tetrahydrofolic acid, 5-formimino-(6S)-tetrahydrofolic acid, and polyglutamyl derivatives thereof;

wherein, when the nutritional substance is a food preparation, the food preparation comprises two or more food components; and

wherein, when the nutritional substance is an essential nutrient preparation, the essential nutrient preparation comprises a vitamin other than ascorbic acid.

13. A method according to claim 12 further comprising:

incorporating into the nutritional substance a molar amount of one or more unnatural isomers of reduced folate selected from the group consisting of (6R)-tetrahydrofolic acid, 5-methyl-(6R)-tetrahydrofolic acid, 5-formyl-(6R)-tetrahydrofolic acid, 10-formyl-(6S)-tetrahydrofolic acid, 5,10-methylene-(6S)-tetrahydrofolic acid, 5,10-methenyl-(6S)-tetrahydrofolic acid, 5-formimino-(6R)-tetrahydrofolic acid, and polyglutamyl derivatives thereof, wherein the molar amount of the one or more unnatural isomers of reduced folate is less than the molar amount of the one or more natural isomers of reduced folate.

14. A method according to claim 12, wherein each of the one or more natural isomers of reduced folate is substantially chirally pure.

15. A method according to claim 12, wherein the one or more natural isomers of reduced folate is selected from the group consisting of 5-methyl-(6S)-tetrahydrofolic acid, 5-formyl-(6S)-tetrahydrofolic acid, 5,10-methenyl-(6R)-tetrahydrofolic acid, and polyglutamyl derivatives thereof.
16. A method according to claim 12, wherein the nutritional substance is an essential nutrient preparation comprising a vitamin other than ascorbic acid.
17. A method according to claim 16, wherein the essential nutrient preparation further comprises ascorbic acid.
18. A method according to claim 12, wherein the nutritional substance is a food preparation and wherein said method further comprises:
incorporating a vitamin into the food preparation.
19. A method for increasing a subject's dietary intake of folate comprising:
administering a composition according to claim 1 to the subject.
20. A method according to claim 19, wherein said administering is carried out by enteral administration.
21. A method according to claim 19, wherein the subject is an animal.
22. A method according to claim 21, wherein the total molar amount of said one or more natural isomers of reduced folate is between 5% and 3000% of the animal's daily requirement for folate per customarily consumed quantity of said composition.
23. A method according to claim 19, wherein the subject is a human.

24. A method according to claim 23, wherein the total molar amount of said one or more natural isomers of reduced folate is between 5% and 200% of the human's daily requirement for folate per customarily consumed quantity of said composition.

25. A method according to claim 23, wherein the human is selected from the group consisting of a pregnant female; a female who has had a miscarriage; a female who has carried a fetus having a neural tube defect, a cleft lip defect, or a cleft palate defect; and a human who suffers vascular disease.

26. A method for treating a subject afflicted with intestinal malabsorption comprising:
administering to the subject an amount of a composition according to claim 1 effective to increase the subject's blood folate level.